Section 2. Emergency Assistance

10-2-1. INFORMATION REQUIREMENTS

a. Start assistance as soon as enough information has been obtained upon which to act. Information requirements will vary, depending on the existing situation. Minimum required information for inflight emergencies is:

NOTE-
In the event of an ELT signal see para 10-2-10, Emergency Locator Transmitter (ELT) Signals.

1. Aircraft identification and type.
2. Nature of the emergency.
3. Pilot's desires.

b. After initiating action, obtain the following items or any other pertinent information from the pilot or aircraft operator, as necessary:

NOTE-
Normally, do not request this information from military fighter-type aircraft that are at low altitudes (i.e. on approach, immediately after departure, on a low level route, etc.). However, request the position of an aircraft that is not visually sighted or displayed on radar if the location is not given by the pilot.

1. Aircraft altitude.
2. Fuel remaining in time.
3. Pilot reported weather.
4. Pilot capability for IFR flight.
5. Time and place of last known position.
6. Heading since last known position.
7. Airspeed.
8. Navigation equipment capability.
9. NAVAID signals received.
10. Visible landmarks.
11. Aircraft color.
12. Number of people on board.
13. Point of departure and destination.
14. Emergency equipment on board.

10-2-2. FREQUENCY CHANGES

Although 121.5 MHz and 243.0 MHz are emergency frequencies, it might be best to keep the aircraft on the initial contact frequency. Change frequencies only when there is a valid reason.

10-2-3. AIRCRAFT ORIENTATION

Orientate an aircraft by the means most appropriate to the circumstances. Recognized methods include:

a. Radar.

b. DF.

c. NAVAID's.

d. Pilotage.

e. Sighting by other aircraft.

10-2-4. ALTITUDE CHANGE FOR IMPROVED RECEPTION

When you consider it necessary and if weather and circumstances permit, recommend that the aircraft maintain or increase altitude to improve communications, radar, or DF reception.

NOTE-
Aircraft with high-bypass turbofan engines (such as B747) encountering volcanic ash clouds have experienced total loss of power to all engines. Damage to engines due to volcanic ash ingestion increases as engine power is increased, therefore, climb while in the ash cloud is to be avoided where terrain permits.

REFERENCE-
AIM, Flight Operations in Volcanic Ash, Para 7-5-8.

10-2-5. EMERGENCY SITUATIONS

Consider that an aircraft emergency exists and inform the RCC or ARTCC and alert the appropriate DF facility when:

NOTE-
1. *USAF facilities are only required to notify the ARTCC.*

2. *The requirement to alert DF facilities may be deleted if radar contact will be maintained throughout the duration of the emergency.*

a. An emergency is declared by either:

1. The pilot.
2. Facility personnel.

3. Officials responsible for the operation of the aircraft.

b. There is unexpected loss of radar contact and radio communications with any IFR or VFR aircraft.

c. Reports indicate it has made a forced landing, is about to do so, or its operating efficiency is so impaired that a forced landing will be necessary.

d. Reports indicate the crew has abandoned the aircraft or is about to do so.

e. An emergency radar beacon response is received.

NOTE-
*EN ROUTE. During Stage A operation, **Code 7700** causes EMRG to blink in field E of the data block.*

f. Intercept or escort aircraft services are required.

g. The need for ground rescue appears likely.

h. An Emergency Locator Transmitter (ELT) signal is heard or reported.

REFERENCE-
FAAO 7110.65, Providing Assistance, Para 10-1-3.
FAAO 7110.65, Emergency Locator Transmitter (ELT) Signals, Para 10-2-10.

10-2-6. HIJACKED AIRCRAFT

When you observe a Mode 3/A **Code 7500,** do the following:

NOTE-
Military facilities will notify the appropriate FAA ARTCC, or the host nation agency responsible for en route control, of any indication that an aircraft is being hijacked. They will also provide full cooperation with the civil agencies in the control of such aircraft.

*EN ROUTE. During narrowband radar operations, **Code 7500** causes HIJK to blink in the data block.*

NOTE-
*Only nondiscrete **CODE 7500** will be decoded as the hijack code.*

a. Acknowledge and confirm receipt of **Code 7500** by asking the pilot to verify it. If the aircraft is not being subjected to unlawful interference, the pilot should respond to the query by broadcasting in the clear that he/she is not being subjected to unlawful interference. If the reply is in the affirmative or if no reply is received, do not question the pilot further but be responsive to the aircraft requests.

PHRASEOLOGY-
(Identification) (name of facility) VERIFY SQUAWKING 7500.

NOTE-
***Code 7500** is only assigned upon notification from the pilot that his/her aircraft is being subjected to unlawful interference. Therefore, pilots have been requested to refuse the assignment of **Code 7500** in any other situation and to inform the controller accordingly.*

b. Notify supervisory personnel of the situation.

c. Flight follow aircraft and use normal handoff procedures without requiring transmissions or responses by aircraft unless communications have been established by the aircraft.

d. If aircraft are dispatched to escort the hijacked aircraft, provide all possible assistance to the escort aircraft to aid in placing them in a position behind the hijacked aircraft.

NOTE-
Escort procedures are contained in FAAO 7610.4, Special Military Operations, Chapter 7, Escort of Hijacked Aircraft.

e. To the extent possible, afford the same control service to the aircraft operating VFR observed on the hijack code.

REFERENCE-
FAAO 7110.65, Code Monitor, Para 5-2-13.

10-2-7. VFR AIRCRAFT IN WEATHER DIFFICULTY

a. If VFR aircraft requests assistance when it encounters or is about to encounter IFR weather conditions, request the aircraft to contact the appropriate control facility. Inform that facility of the situation. If the aircraft is unable to communicate with the control facility, relay information and clearances.

b. The following shall be accomplished on a Mode C equipped VFR aircraft which is in emergency but no longer requires the assignment of ***Code 7700:***

1. *TERMINAL.* Assign a beacon code that will permit terminal minimum safe altitude warning (MSAW) alarm processing.

2. *EN ROUTE.* An appropriate keyboard entry shall be made to ensure en route MSAW (EMSAW) alarm processing.

10-2-8. RADAR ASSISTANCE TO VFR AIRCRAFT IN WEATHER DIFFICULTY

a. If a VFR aircraft requests radar assistance when it encounters or is about to encounter IFR weather conditions, ask the pilot if he/she is qualified for and capable of conducting IFR flight.

b. If the pilot states he/she is qualified for and capable of IFR flight, request him/her to file an IFR flight plan and then issue clearance to destination airport, as appropriate.

c. If the pilot states he/she is not qualified for or not capable of conducting IFR flight, or if he/she refuses to file an IFR flight plan, take whichever of the following actions is appropriate:

1. Inform the pilot of airports where VFR conditions are reported, provide other available pertinent weather information, and ask if he/she will elect to conduct VFR flight to such an airport.

2. If the action in subpara 1 above is not feasible or the pilot declines to conduct VFR flight to another airport, provide radar assistance if the pilot:

(a) Declares an emergency.

(b) Refuses to declare an emergency and you have determined the exact nature of the radar services the pilot desires.

3. If the aircraft has already encountered IFR conditions, inform the pilot of the appropriate terrain/obstacle clearance minimum altitude. If the aircraft is below appropriate terrain/obstacle clearance minimum altitude and sufficiently accurate position information has been received or radar identification is established, furnish a heading or radial on which to climb to reach appropriate terrain/obstacle clearance minimum altitude.

d. The following shall be accomplished on a Mode C equipped VFR aircraft which is in emergency but no longer requires the assignment of ***Code 7700:***

1. *TERMINAL.* Assign a beacon code that will permit terminal minimum safe altitude warning (MSAW) alarm processing.

2. *EN ROUTE.* An appropriate keyboard entry shall be made to ensure en route MSAW (EMSAW) alarm processing.

10-2-9. RADAR ASSISTANCE TECHNIQUES

Use the following techniques to the extent possible when you provide radar assistance to a pilot not qualified to operate in IFR conditions:

a. Avoid radio frequency changes except when necessary to provide a clear communications channel.

b. Make turns while the aircraft is in VFR conditions so it will be in a position to fly a straight course while in IFR conditions.

c. Have pilot lower gear and slow aircraft to approach speed while in VFR conditions.

d. Avoid requiring a climb or descent while in a turn if in IFR conditions.

e. Avoid abrupt maneuvers.

f. Vector aircraft to VFR conditions.

g. The following shall be accomplished on a Mode C equipped VFR aircraft which is in emergency but no longer requires the assignment of Code 7700:

1. *TERMINAL.* Assign a beacon code that will permit terminal minimum safe altitude warning (MSAW) alarm processing.

2. *EN ROUTE.* An appropriate keyboard entry shall be made to ensure en route MSAW (EMSAW) alarm processing.

10-2-10. EMERGENCY LOCATOR TRANSMITTER (ELT) SIGNALS

When an ELT signal is heard or reported:

a. *EN ROUTE.* Notify the Rescue Coordination Center (RCC).

NOTE-
FAA Form 7210-8, ELT INCIDENT, contains standardized format for coordination with the RCC.

REFERENCE-
FAAO 7210.3, FAA Form 7210-8, ELT Incident, Para 9-3-1.

b. *TERMINAL.* Notify the ARTCC which will coordinate with the RCC.

NOTE-
1. Operational ground testing of emergency locator transmitters (ELT's) has been authorized during the first 5 minutes of each hour. To avoid confusing the tests with an actual alarm, the testing is restricted to no more than three audio sweeps.

2. Controllers can expect pilots to report aircraft position and time the signal was first heard, aircraft position and time the signal was last heard, aircraft position at maximum signal strength, flight altitude, and frequency of the emergency signal (121.5/243.0). (See AIM, Emergency Locator Transmitter (ELT), Para 6-2-5.)

c. *EN ROUTE.* Request DF facilities obtain fixes or bearings on signal. Forward bearings or fixes obtained plus any other pertinent information to the RCC.

d. *TERMINAL.* Attempt to obtain fixes or bearings on the signal.

e. Solicit the assistance of other aircraft known to be operating in the signal area.

f. *TERMINAL.* Forward fixes or bearings and any other pertinent information to the ARTCC.

NOTE-
Fix information in relation to a VOR or VORTAC (radial-distance) facilitates accurate ELT plotting by RCC and should be provided when possible.

g. *EN ROUTE.* When the ELT signal strength indicates the signal may be emanating from somewhere on an airport or vicinity thereof, notify the on-site airway facilities personnel and the Regional Operations Center (ROC) for their actions. This action is in addition to the above.

h. *TERMINAL.* When the ELT signal strength indicates the signal may be emanating from somewhere on the airport or vicinity thereof, notify the on-site airway facilities personnel and the ARTCC for their action. This action is in addition to the above.

i. Air Traffic personnel shall not leave their required duty stations to locate an ELT signal source.

NOTE-
Portable handcarried receivers assigned to air traffic facilities (where no airway facilities personnel are available) may be loaned to responsible airport personnel or local authorities to assist in locating the ELT signal source.

j. *EN ROUTE.* Notify the RCC, the ROC, and alerted DF facilities if signal source is located/terminated.

k. *TERMINAL.* Notify the ARTCC if signal source is located/terminated.

REFERENCE-
FAAO 7110.65, Responsibility, Para 10-1-4.
FAAO 7110.65, Information Requirements, Para 10-2-1.

10-2-11. AIRCRAFT BOMB THREATS

a. When information is received from any source that a bomb has been placed on, in, or near an aircraft for the purpose of damaging or destroying such aircraft, notify your supervisor or the facility air traffic manager. If the threat is general in nature, handle it as a "Suspicious Activity." When the threat is targeted against a specific aircraft and you are in contact with the suspect aircraft, take the following actions as appropriate:

NOTE-
1. Facility supervisors are expected to notify the appropriate offices, agencies, operators/air carriers according to applicable plans, directives, and FAAO 7210.3, Handling Bomb Threat Incidents, Para 2-1-8, or applicable military directives.

2. "Suspicious activity" is covered in FAAO 7210.3, Suspicious Activities, Para 2-7-6. Military facilities would report a "general" threat through the chain of command or according to service directives.

1. Advise the pilot of the threat.

2. Inform the pilot that technical assistance can be obtained from an FAA aviation explosives expert.

NOTE-
An FAA aviation explosive expert is on call at all times and may be contacted by calling the FAA Operations Center, Washington, DC, Area Code 202-267-3333, ETN 521-0111, or DSN 667-5592. Technical advice can be relayed to assist civil or military air crews in their search for a bomb and in determining what precautionary action to take if one is found.

3. Ask the pilot if he/she desires to climb or descend to an altitude that would equalize or reduce the outside air pressure/existing cabin air pressure differential. Issue or relay an appropriate clearance considering MEA, MOCA, MRA, and weather.

NOTE-
Equalizing existing cabin air pressure with outside air pressure is a key step which the pilot may wish to take to minimize the damage potential of a bomb.

4. Handle the aircraft as an emergency and/or provide the most expeditious handling possible with respect to the safety of other aircraft, ground facilities, and personnel.

NOTE-
Emergency handling is discretionary and should be based on the situation. With certain types of threats, plans may call for a low-key action or response.

5. Issue or relay clearances to a new destination if requested.

6. When a pilot requests technical assistance or if it is apparent that a pilot may need such assistance, do NOT suggest what actions the pilot should take concerning a bomb, but obtain the following information and notify your supervisor who will contact the FAA aviation explosives expert:

NOTE-
This information is needed by the FAA aviation explosives expert so that he/she can assess the situation and make immediate recommendations to the pilot. The aviation explosives expert may not be familiar with all military aircraft configurations but he/she can offer technical assistance which would be beneficial to the pilot.

(a) Type, series, and model of the aircraft.

(b) Precise location/description of the bomb device if known.

(c) Other details which may be pertinent.

NOTE-
The following details may be of significance if known, but it is not intended that the pilot should disturb a suspected bomb/bomb container to ascertain the information: The altitude or time set for the bomb to explode, type of detonating action (barometric, time, anti-handling, remote radio transmitter), power source (battery, electrical, mechanical), type of initiator (blasting cap, flash bulb, chemical), and the type of explosive/incendiary charge (dynamite, black powder, chemical).

b. When a bomb threat involves an aircraft on the ground and you are in contact with the suspect aircraft, take the following actions in addition to those discussed in the preceding paragraphs which may be appropriate:

1. If the aircraft is at an airport where tower control or FSS advisory service is not available, or if the pilot ignores the threat at any airport, recommend that takeoff be delayed until the pilot or aircraft operator establishes that a bomb is not aboard in accordance with 14 CFR Part 121. If the pilot insists on taking off and in your opinion the operation will not adversely affect other traffic, issue or relay an ATC clearance.

REFERENCE-
14 CFR Section 121.538, Airplane Security.

2. Advise the aircraft to remain as far away from other aircraft and facilities as possible, to clear the runway, if appropriate, and to taxi to an isolated or designated search area. When it is impractical or if the pilot takes an alternative action; e.g., parking and off-loading immediately, advise other aircraft to remain clear of the suspect aircraft by at least 100 yards if able.

NOTE-
Passenger deplaning may be of paramount importance and must be considered before the aircraft is parked or moved away from service areas. The decision to use ramp facilities rests with the pilot, aircraft operator/airport manager.

c. If you are unable to inform the suspect aircraft of a bomb threat or if you lose contact with the aircraft, advise your supervisor and relay pertinent details to other sectors or facilities as deemed necessary.

d. When a pilot reports the discovery of a bomb or suspected bomb on an aircraft which is airborne or on the ground, determine the pilot's intentions and comply with his/her requests in so far as possible. Take all of the actions discussed in the preceding paragraphs which may be appropriate under the existing circumstances.

e. The handling of aircraft when a hijacker has or is suspected of having a bomb requires special considerations. Be responsive to the pilot's requests and notify supervisory personnel. Apply hijacking procedures and offer assistance to the pilot according to the preceding paragraphs, if needed.

10-2-12. EXPLOSIVE DETECTION K-9 TEAMS

Take the following actions should you receive an aircraft request for the location of the nearest explosive detection K-9 team.

REFERENCE-
FAAO 7210.3, Explosives Detection K-9 Teams, Para 2-1-10.

a. Obtain the aircraft identification and position and advise your supervisor of the pilot request.

b. When you receive the nearest location of the explosive detection K-9 team, relay the information to the pilot.

c. If the aircraft wishes to divert to the airport location provided, obtain an estimated arrival time from the pilot and advise your supervisor.

10-2-13. EMERGENCY AIRPORT RECOMMENDATION

a. Consider the following factors when recommending an emergency airport:

1. Remaining fuel in relation to airport distances.
2. Weather conditions.

NOTE-
Depending on the nature of the emergency, certain weather phenomena may deserve weighted consideration when recommending an airport; e.g., a pilot may elect to fly farther to land at an airport with VFR instead of IFR conditions.

3. Airport conditions.
4. NAVAID status.
5. Aircraft type.

6. Pilot's qualifications.

7. Vectoring or homing capability to the emergency airport.

b. Consideration to the provisions of subpara a and para 10-2-14, Guidance to Emergency Airport, shall be used in conjunction with the information derived from any automated emergency airport information source.

10-2-14. GUIDANCE TO EMERGENCY AIRPORT

a. When necessary, use any of the following for guidance to the airport:

1. Radar.
2. DF.
3. Following another aircraft.
4. NAVAID's.
5. Pilotage by landmarks.
6. Compass headings.

b. Consideration to the provisions of para 10-2-13, Emergency Airport Recommendation, shall be used in conjunction with the information derived from any automated emergency airport information source.

10-2-15. EMERGENCY OBSTRUCTION VIDEO MAP (EOVM)

a. The EOVM is intended to facilitate advisory service to an aircraft in an emergency situation wherein an appropriate terrain/obstacle clearance minimum altitude cannot be maintained. It shall only be used and the service provided under the following conditions:

1. The pilot has declared an emergency, or

2. The controller has determined that an emergency condition exists or is imminent because of the pilot's inability to maintain an appropriate terrain/obstacle clearance minimum altitude.

NOTE-
Appropriate terrain/obstacle clearance minimum altitudes may be defined as Minimum IFR Altitude (MIA), Minimum En Route Altitude (MEA), Minimum Obstruction Clearance Altitude (MOCA), or Minimum Vectoring Altitude (MVA).

b. When providing emergency vectoring service, the controller shall advise the pilot that any headings issued are emergency advisories intended only to direct the aircraft toward and over an area of lower terrain/obstacle elevation.

NOTE-
Altitudes and obstructions depicted on the EOVM are the actual altitudes and locations of the obstacle/terrain and contain no lateral or vertical buffers for obstruction clearance.

REFERENCE-
FAAO 7210.3, Emergency Obstruction Video Map (EOVM), Para 3-9-4.

10-2-16. VOLCANIC ASH

a. If a volcanic ash cloud is known or forecast to be present:

1. Relay all information available to pilots to ensure that they are aware of the ash cloud's position and altitude(s).

2. Suggest appropriate reroutes to avoid the area of known or forecast ash clouds.

NOTE-
Volcanic ash clouds are not normally detected by airborne or air traffic radar systems.

b. If advised by an aircraft that it has entered a volcanic ash cloud and indicates that a distress situation exists:

1. Consider the aircraft to be in an emergency situation.

2. Do not initiate any climb clearances to turbine powered aircraft until the aircraft has exited the ash cloud.

3. Do not attempt to provide escape vectors without pilot concurrence.

NOTE-
1. *The recommended escape maneuver is to reverse course and begin a descent (if terrain permits). However, it is the pilot's responsibility to determine the safest escape route from the ash cloud.*

2. *Controllers should be aware of the possibility of complete loss of power to any turbine powered aircraft that encounters an ash cloud.*

REFERENCE-
FAAO 7110.65, Altitude Change for Improved Reception, Para 10-2-4.
AIM, Flight Operations in Volcanic Ash, Para 7-5-8.